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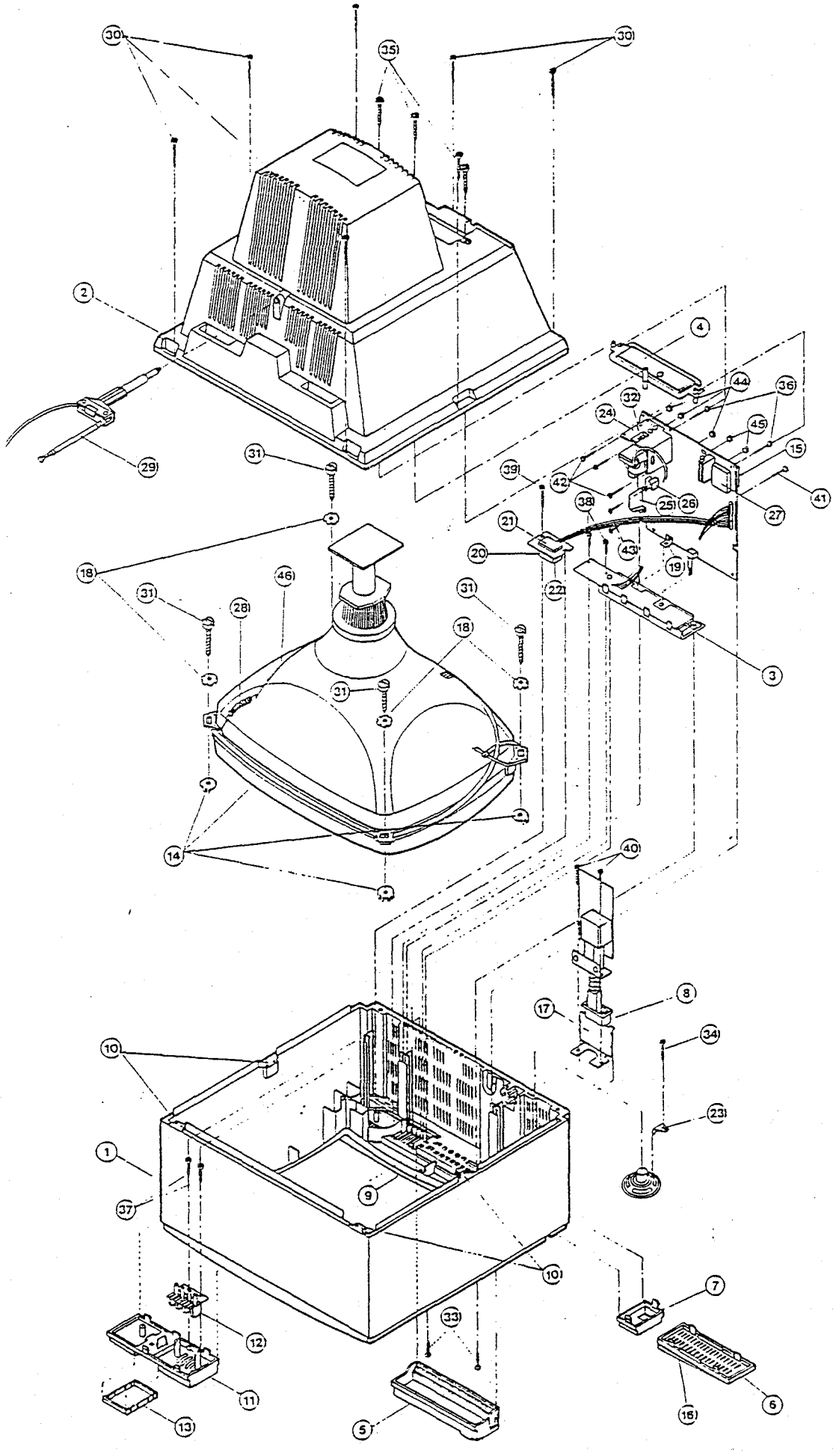
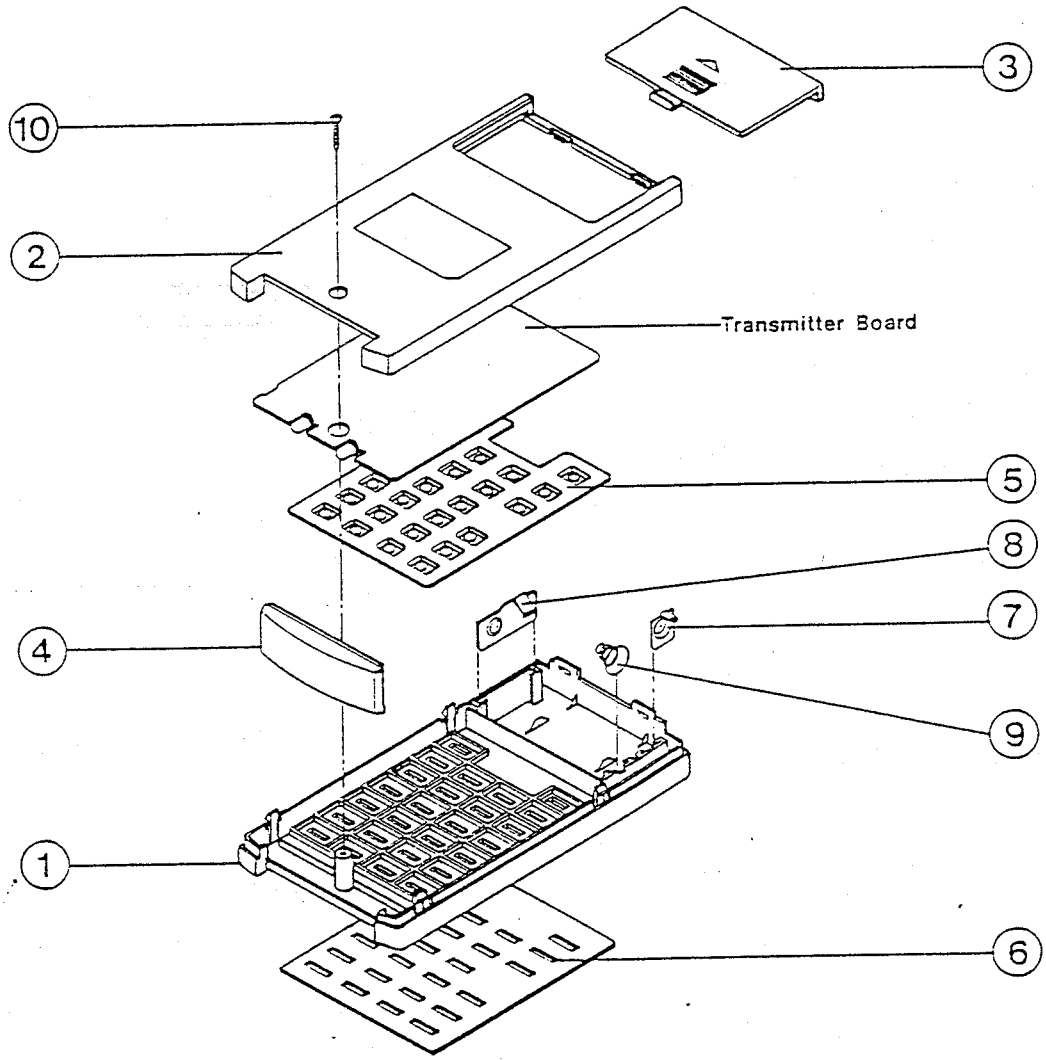
MECHANICAL PART LIST FOR MAIN UNIT

ITEM	PART NO.	DESCRIPTION
1.	A07-A0120-00	FRONT CABINET
2.	A07-A0121-00	BACK COVER
3.	A07-A0122-00	FRONT BRACKET
4.	A07-A0123-00	REAR BRACKET
5.	A07-A0124-00	DOOR
6.	A07-A0125-00	SPEAKER GRILLE
7.	A07-A0126-00	POWER SWITCH PLATE
8.	A07-A0127-00	POWER KNOB
9.	A07-A0128-00	NAME PLATE
10.	A07-A0129-00	FIXING POST
11.	A01-A0119-00	CONTROL PANEL
12.	A01-A0131-00	PUSH BUTTON
13.	A01-A0130-00	INFRARED LENS
14.	B00-A0053-00	METAL PAD
15.	B00-A0055-00	SHIELD CAN
16.	B00-A0044-00	SPEAKER GRILLE
17.	B01-A0046-00	POWER SW. HOLDER
18.	B00-A0051-00	METAL WASHER (FOR CRT MTG.)
19.	B01-A0047-00	METAL BRACKET
20.	B00-A0045-00	SHIELD CAN 'A'
21.	B00-A0039-00	SHIELD CAN 'B'
22.	B00-A0040-00	SHIELD CAN 'C'
23.	B00-A0020-00	SPEAKER CLIP
24.	B01-A0005-00	HEAT SINK BRACKET FOR POWER
25.	B01-A0006-00	HEAT SINK FOR HORIZONTAL AMP.
26.	B01-A0007-00	HEAT SINK TRANSISTOR
27.	B01-A0008-00	PIF SHIELDING COVER
28.	E00-A0001-00	GROUNDING WIRE SPRING 7 DIA. X 14 FOR TWISTED WIRE
29.	F00-A0004-00	INDOOR ANTENNA
30.	M3B-T4001-20	T4 X 20 B/H (+) FOR BACK CAB./FRONT CAB. MTG. — BLACK
31.	M1H-T6001-40	T6 X 40 H/H (+) FOR CRT/FRONT CAB. MTG.
32.	M1B-T4001-10	T4 X 10 B/H (+) FOR HEAT SINK/FLYBACK TRANS. MTG.
33.	M3B-T3001-10	T3 x 10 B/H (+) FOR FRONT CAB./FRONT BKT. MTG. — BLACK
34.	M1B-T3001-10	T3 X 10 B/H (+) FOR SPEAKER/FRONT CAB. MTG.
35.	M3B-T4001-12	T4 X 12 B/H (+) FOR BACK CAB./REAR BKT. MTG. — BLACK
36.	M1B-T3001-08	T3 X 8 B/H (+) FOR P.C.B./REAR BKT. MTG.
37.	M1B-T2601-08	T2.6 X 8 B/H (+) FOR PUSH BUTTOM/CONTROL PANEL MTG.
38.	M1B-T2601-08	T2.6 X 8 B/H (+) FOR CONTROL P.C.B./CONTROL PANEL MTG.
39.	M1B-T2601-08	T2.6 X 8 B/H (+) FOR RECEIVER BOARD/CONTROL PANEL MTG.
40.	M2B-M3050-04	M3 X 4 B/H (+) FOR POWER SW./POWER SW. HOLDER MTG.
41.	M2B-M3050-04	M3 X 4 B/H (+) FOR MAIN P.C.B./METAL BKT. MTG.
42.	M2B-M3050-08	M3 X 8 B/H (+) FOR HEAT SINK BKT./MAIN P.C.B. MTG.
43.	M2B-M3050-08	M3 X 8 B/H (+) FOR HEAT SINK TRANS./MAIN P.C.B. MTG.
44.	N1H-M3050-02	M3 NUT FOR HEAT SINK BKT. MTG.
45.	N1H-M3050-02	M3 NUT FOR HEAT SINK TRANS. MTG.
46.	P01-01125-01	TWISTED WIRE L = 1250MM

EXPLODED VIEW OF MAIN UNIT



REMOTE CONTROL UNIT



MECHANICAL PART LIST

ITEM	PART NO.	DESCRIPTION
1.	A01-A0078-06	Top Cabinet
2.	A01-A0079-01	Bottom Cabinet
3.	A01-A0080-00	Battery Door
4.	A01-A0081-00	Infrared Lens
5.	D01-A0020-00	Rubber Contact Plate

ITEM	PART NO.	DESCRIPTION
6.	D02-A0033-01	Handset Inlay
7.	B00-A0025-00	Battery Contact Plate (+)
8.	B00-A0024-00	Battery Contact Plate (+/-)
9.	E00-A0009-00	Battery Contact Spring (-)
10.	M3P-T2601-08	Screw T2.6×8 P/H (+)

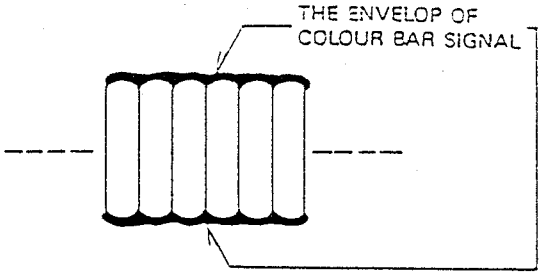
IV. Colour Decoder Adjustment For SECAM System

1. Bell Filter Adjustment

   (a). Apply a SECAM colour bar signal (60dB level) to the input.

   (b). Connect an oscilloscope to Pin 27 of IC202.

   (c). Adjust T203 to make the envelop of colour bar signal into flat. (Fig. 11)



SECAM COLOUR BAR SIGNAL Fig. 11.

2. Identifier Adjustment

   (a). Apply a SECAM colour bar signal (60dB level) to the input.

   (b). Connect a high impedance DC Voltmeter to Pin 26 of IC202.

   (c). Adjust T204 to the indent filter voltage into maximum value (~10V).

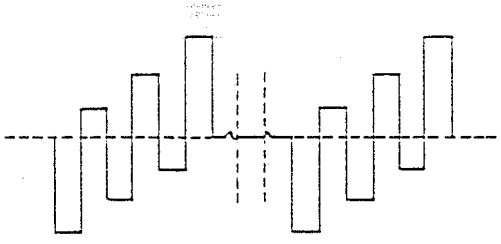
3. B-Y Demodulation

   (a). Apply a SECAM colour bar signal to the input.

   (b). Set Brightness, Contrast and Colour controls to the maximum.

   (c). Connect an oscilloscope to Pin 2 of socket H.

   (d). Adjust T201 to obtain a B-Y signal with correct chrominance output, as shown in Fig. 12.



B-Y SIGNAL Fig. 12.

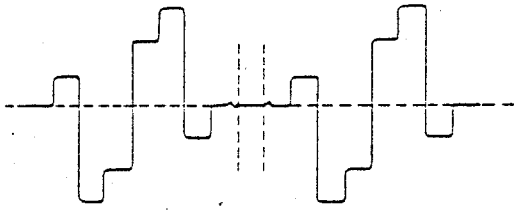
4. R-Y Demodulation

   (a). Apply a SECAM colour bar signal.

   (b). Set Brightness, Contrast and Colour controls to maximum.

   (c). Connect an oscilloscope to Pin 3 of socket H.

   (d). Adjust T202 to obtain an R-Y signal with correct chrominance output, as shown in Fig. 13.



R-Y SIGNAL Fig. 13.

(c) Adjust two tabs of the 4 Pole Magnets to change the angle between them (see Fig. 9 .) and superimpose red and blue vertical lines in the centre area of the picture screen. (See Fig.10 .)

(d) Turn both tabs of the 4 Pole Magnets to change the angle to superimpose red and blue horizontal lines at the centre of screen (See Fig. 9 .)

(f) Repeat adjustments 3, 4, 5, keeping in mind red, green and blue movement, because 4 Pole Magnets and 6 Pole Magnets interact and make dot movement complex.

4. Circumference Convergence Adjustment

NOTE: This adjustment requires Rubber Wedges and Glass Cloth Tapes.

(a) Loosen the clamping screws of deflection yoke to allow the yoke to tilt.

(b) Place a wedge as shown in Figure 8 temporarily. (Do not remove cover paper on adhesive part of the wedge).

(c) Tilt front of the deflection yoke up or down to obtain better convergence in circumferenc. (See Fig. 8 .) Push the mounted wedge into the space between picture tube and the yoke to hold the yoke temporarily.

(d) Place other wedge into bottom space and remove the cover paper to stick.

(e) Tilt front of the yoke right or left obtain better convergence in circumference. (See Fig.10 .)

(f) Hold the yoke position and put another wedge in either upper space. Remove cover paper and stick the wedge on picture tube to hold the yoke.

(g) Detach the temporarily mounted wedge and put it in anothe upper space. Stick it on picture tube to fix the yoke.

(h) After placing three wedges, recheck over all convergence. Tighten the screw firmly to hold the yoke tightly in place.

(i) Stick 3 grass cloth tapes on wedges as shown in Figure 8 .

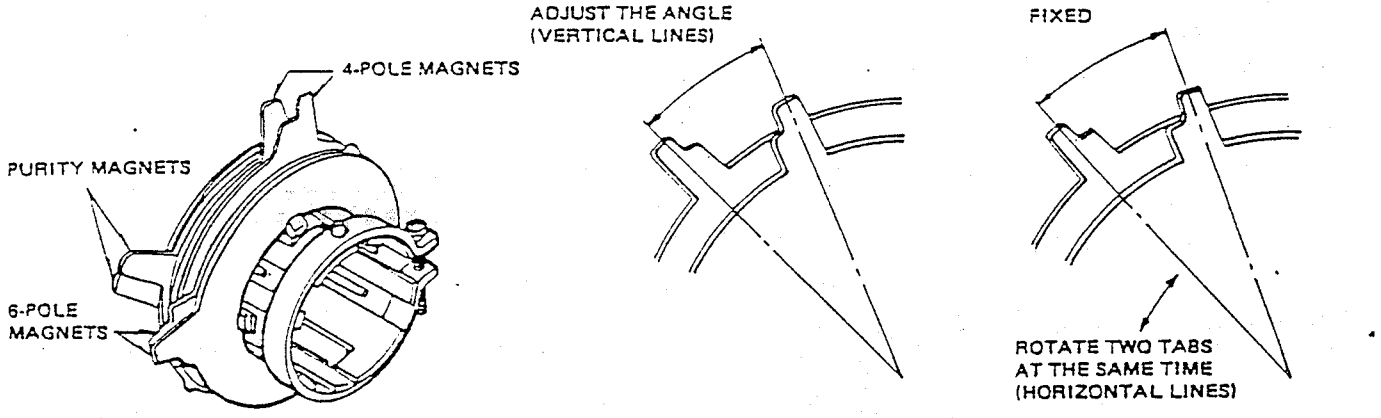


Fig. 9 .

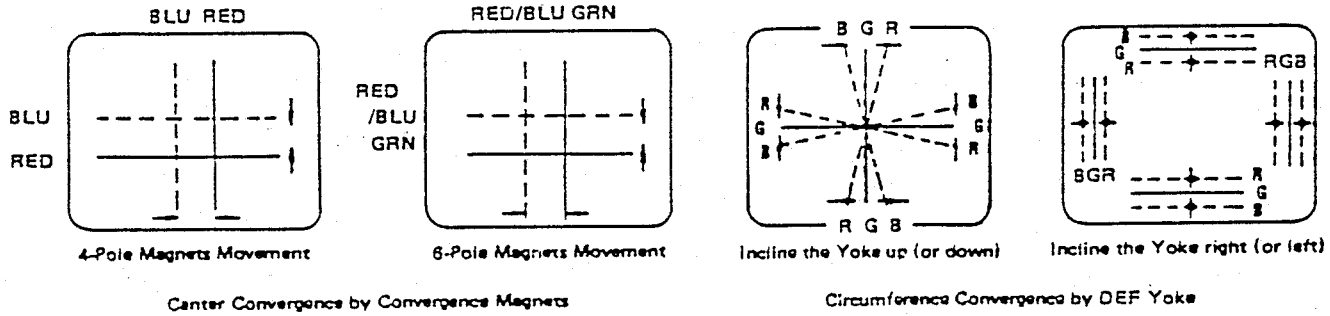


Fig. 10 . Dot Movement Pattern

13. Sub-Brightness Adjustment

(a) Receive the philips pattern signal.

(b) Set the contrast, Brightness and colour controls to minimum position.

(c) Adjust sub-brightness (VR404) until light just appears on the screen.

III. Color Purity And Convergence Adjustment

1. Color Purity Adjustment

NOTE: Before attempting any purity adjustments, the receiver should be operated for at least fifteen minutes.

(a) Demagnetize the picture tube and cabinet using a degaussing coil.

(b) Turn the Contrast and Brightness controls to maximum.

(c) Adjust Red and Blue controls (VR501) and (VR505); to provide only a green raster. Advance the Green Bias control (VR502) if necessary.

(d) Loosen the clamp screw holding the yoke backward to provide vertical green belt (Zone) in the picture screen.

(e) Remove the Rubber Wedges.

(f) Rotate and spread the tabs of the purity magnet (see Fig. 9.) around the neck of the picture tube until the green belt is in centre of the screen. At the same time, centre the raster vertically.

(g) Move the yoke slowly forward or backward until a uniform green screen is obtained. Tighten the clamp screw of the yoke temproarily.

(h) Check the purity of the red and blue raster by adjusting the Bias controls.

(i) Obtain a white raster, referring to white balance adjustment.

(j) Proceed with convergence adjustment.

2. Convergence Magnet Assembly Positioning

Convergence Magnet Assembly and Rubber Wedges need mechanical positioning following Fig. 8 .

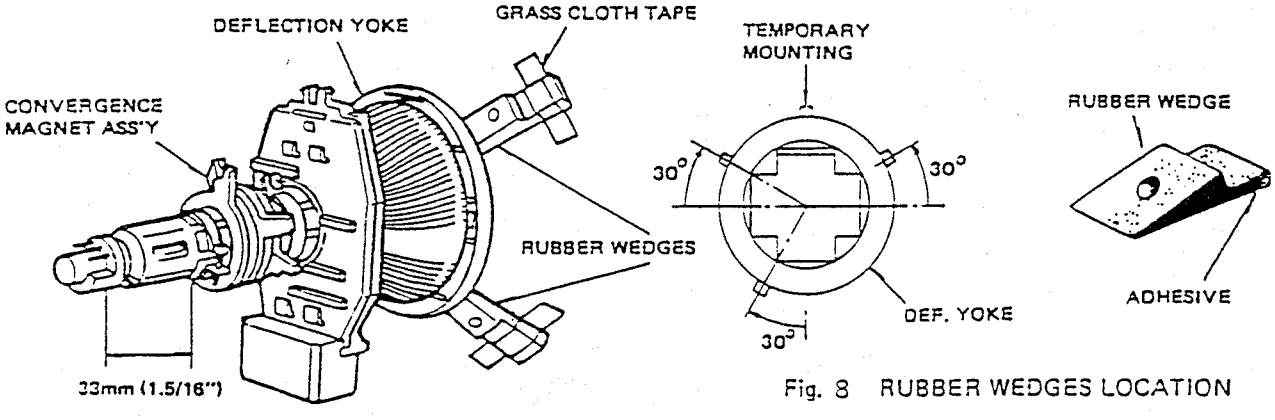


Fig. 8 RUBBER WEDGES LOCATION

3. Centre Convergence Adjustment

NOTE: Before attempting any convergence adjustments, the receiver should be operated for at least fifteen minutes.

(a) Receive crosshatch pattern with a color bar signal generator.

(b) Adjust the Brightness and Contrast controls for well defined pattern.

10. Delay AGC Adjustment

(a) Tune in the colour bar pattern signal

(b) Set input signal level at 60 dB

(c) Connect a high impedance DC Voltmeter to tuner AGC terminal.

(d) Adjust RF AGC control (VR101) for 6.5V +0.2V reading.

(e) Increase input signal level to 100 dB.

(f) Check for normal picture, sound and sync.

11. White Balance Adjustment

(a) Set brightness control to minimum and switch to AV mode.

(b) Set the R.G.B. cut-off (VR501, VR503, VR505) at the centre position.

(c) Rotate the G.B. drive controls (VR502, VR504) fully counter-clockwise first, then clockwise rotate back to 1/3 position.

(d) Turn the screen control to minimum position.

(e) Disconnect the Y signal output terminal connector.

(f) Short TP202 (between C306 and C307) to GND by jumper wire.

(g) Rotate the screen control gradually clockwiseuntil the first horizontal line appears on the screen.

(h) It the first horizontal line is in red, adjust VR503, VR504 to increase the green and blue component level to get a white horizontal line.

(i) Remove the Jumper wire, connect back the Y signal output terminal and switch back to TV.

(j) Receive the philips pattern signal and set the contrast colour control to minimum and brightness control to maximum

(k) Adjust VR502, VR504 to maintain a good white balance at the brightest part of screen.

12. On-Screen Position Adjustment

(a) Select the position "29" by the programme button (+ or −).

(b) Tune in the philips pattern signal.

(c) Press the "Recall" button once, the large character size of programme No. will be changed to small size for approx. 3 seconds.

(d) Adjust C413 for the programme No "29" (small size) position as shown in Fig. 7.

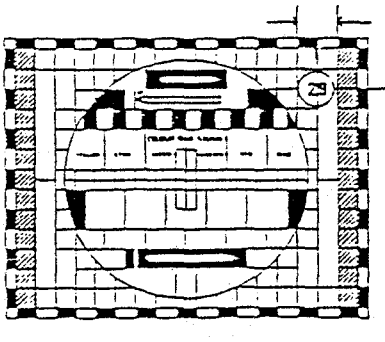


Fig. 7. Philips standard colour pattern

6. Horizontal Position

(a) Receive the philips pattern.

(b) Adjust horizontal hold control (VR203) to the centre

7. Vertical Hold Adjustment

(a) Receive the philips patten.

(b) Short TP201 (pin 37 of IC201) to GND by jumper wire.

(c) Connect a frequency counter to TP202 (between C306 and C307).

(d) Adjust Vertical Hold control (VR204) for 45Hz to 46Hz reading.

8. Colour Syne Adjustment

(a) Tune in a colour bar signal.

(b) Set the colour control to maximum.

(c) Cut off the colour killer by connection the TP203 (pin 2 of IC201) and TP204 (pin 12 of IC201) with 10K ohm resistor.

(d) Short TP205 (L206) to GND by jumper wire.

(e) Adjust the colour sync variable capacitor (C242) for the colour bar pattern stand still or drifty slowly across the picture screen.

9. PAL Matrix Adjustment

(a) Tune in a colour bar signal

(b) Use oscilloscope with 2 channels input and set to "X – Y" mode.

(c) Channel 1 (x) is connected to TP206 (pin 21 of IC201) (R – Y)

(d) Channel 2 (Y) is connected to TP207 (pin 22 of IC201) (B – Y)

(e) Adjust amplitude balance VR202 until the centre points of the two wave forms bring together (Fig. 6.)

(f) Adjust T205 until all other points of two waveforms bring together (Fig. 6.)

(g) Adjust T206 to obtain the maximum hexagon.

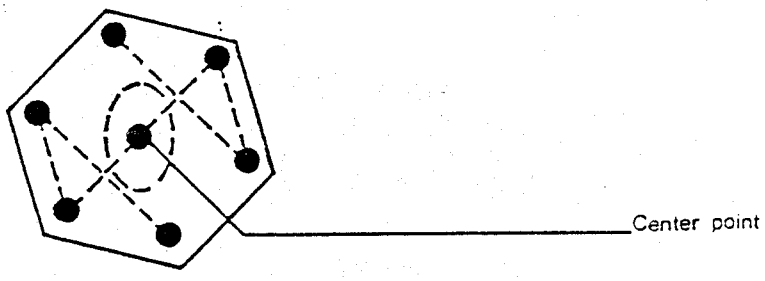


Fig. 6 Matrix Vector Diagram.

II. General Adjustment

1. Automatic Degaussing

An automatic degaussing coil is attached around the picture tube, degaussing the tube properly in about one second after the set is switched on. If the receiver is moved or faced in a different direction, the power must be switched off at least 15 minutes in order that the automatic degaussing circuit operates properly. External degaussing is necessary if the automatic degaussing proves ineffective after the set is moved. External degaussing is done by moving a degaussing coil circlewise in front of the face plate and then switch off the degaussing coil. If residual colour spots are still found on the screen, adjust the color purity and convergence.

2. B +(110V) Adjustment

CAUTION: To avoid X-Ray hazards, B+ voltage must be set correctly at 110V position.

(a) Make sure the AC Power supply is 220V, 50Hz.

(b) Switch on the TV Receiver, tune in an active channel and adjust Brightness/Contrast for maximum.

(c) Connect TP601 (Q606-Emitter) on the Main PCB to a reliable DC voltmeter.

(d) Adjust VR601 on Main PCB for B +110V voltage reading.

3. High Voltage Check

CAUTION: There is no high voltage adjustment in this chassis, B+ 110V voltage directly relates to the high voltage, it must be properly adjusted to insure the correct high voltage. The high voltage must not exceed 25KV under any conditions.

(a) Connect an accurate high voltage meter to the second anode cap of the picture tube.

(b) Turn on the receiver, set Brightness the Contrast controls to minimum. (Zero beam current)

(c) Make sure the high voltage does not exceed 24KV.

(d) No matter whether the luminance, contrast and chrominance controls are set to maximum or minimum, the high voltage must be kept under 25KV.

4. Focusing Adjustment

(a) Receive the philips pattern signal

(b) Set the contrast control to the maximum position.

(c) Adjust focus control of flyback tranformer for a well-defined, sharpest display in the centre of the screen.

5. Height Adjustment

(a) Receive the philips pattern signal.

(b) Adjust the height control (VR205) to slightly overscan the screen.

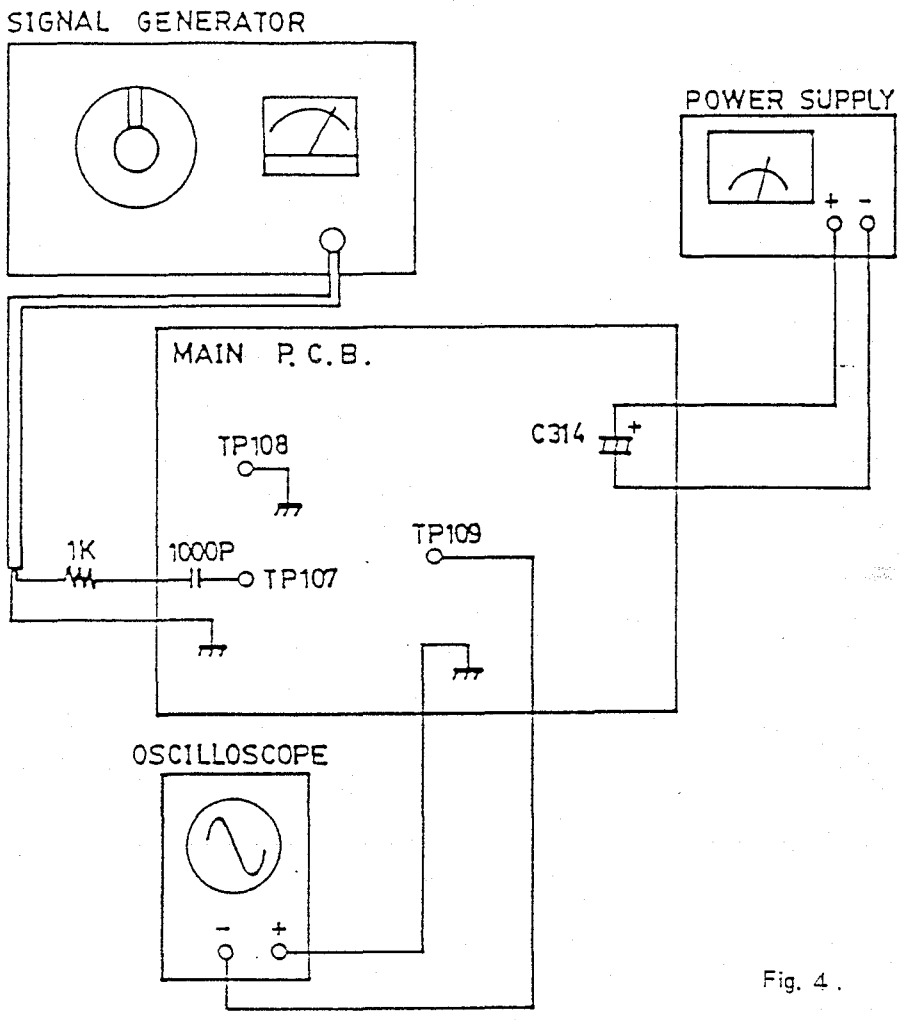


Fig. 4.

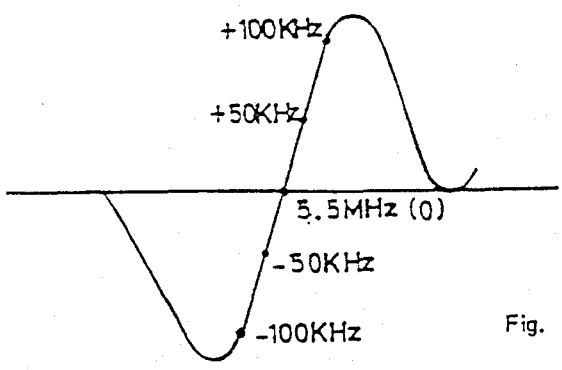


Fig. 5. SIF Response Curve

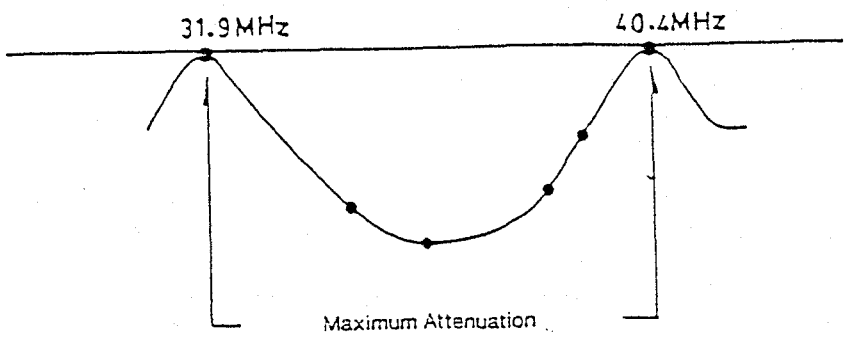
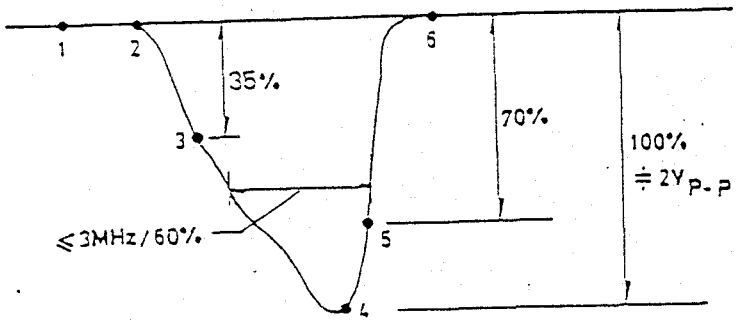


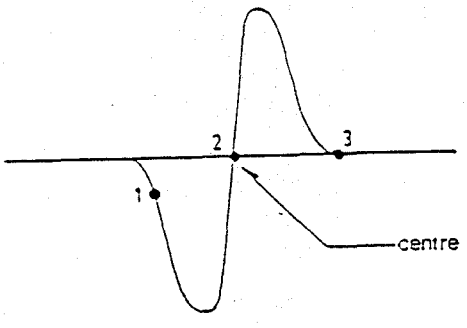
Fig. 10. 31.9, 40.4MHz Traps Resoponse Curve



P.I.F. RESPONSE:

No	Marker of B/G
1	31.9 MHz
2	33.4 MHz
3	34.47 MHz
4	37.9 MHz
5	38.9 MHz
6	40.4 MHz

Fig. 11. P.I.F. Response Curve



AFC Resoonse

No	Marker of B/G
1	37.9 MHz (+)
2	38.9 MHz (0)
3	40.4 MHz (−)

Fig. 12. AFC Response Curve.

(B) S.I.F. Alignment

1. The signal from AM/FM signal generator which is set at 5.5MHz with AF400Hz, 30% FM modulation, is applied to TP107 (between C127 and C128) through a 1K ohm resistor and a 1000pf capacitor as shown in Fig. 13.
2. Short TP103 (pin 5 of IC101) to ground.
3. Connect the oscilloscope input to TP109 (pin 23 of IC101)
4. Apply a +16.5V DC across C314 (TP108).
5. Adjust T104 for the marker (5.5MHz) of SIF waveform at the centre position Fig. 14.

4. Apply a +3V DC to TP104 (pin 3 of IC405) and TP105 (pin 4 of IC405). through 100 ohm.
5. Tune T102 for maximum gain of 38.9MHz as shown in Fig.11.
6. Tune T101 for maximum gain of 34.47MHz as shown in Fig.11.

(c) AFC Alignment

1. Reconnect the sync oscilloscope input with 1M ohm resistor in series to TP106 (pin 14 of IC101).
2. Adjust T103 for the marker (38.9MHz) of AFC wave form at position. (See Fig.12.) the centre.

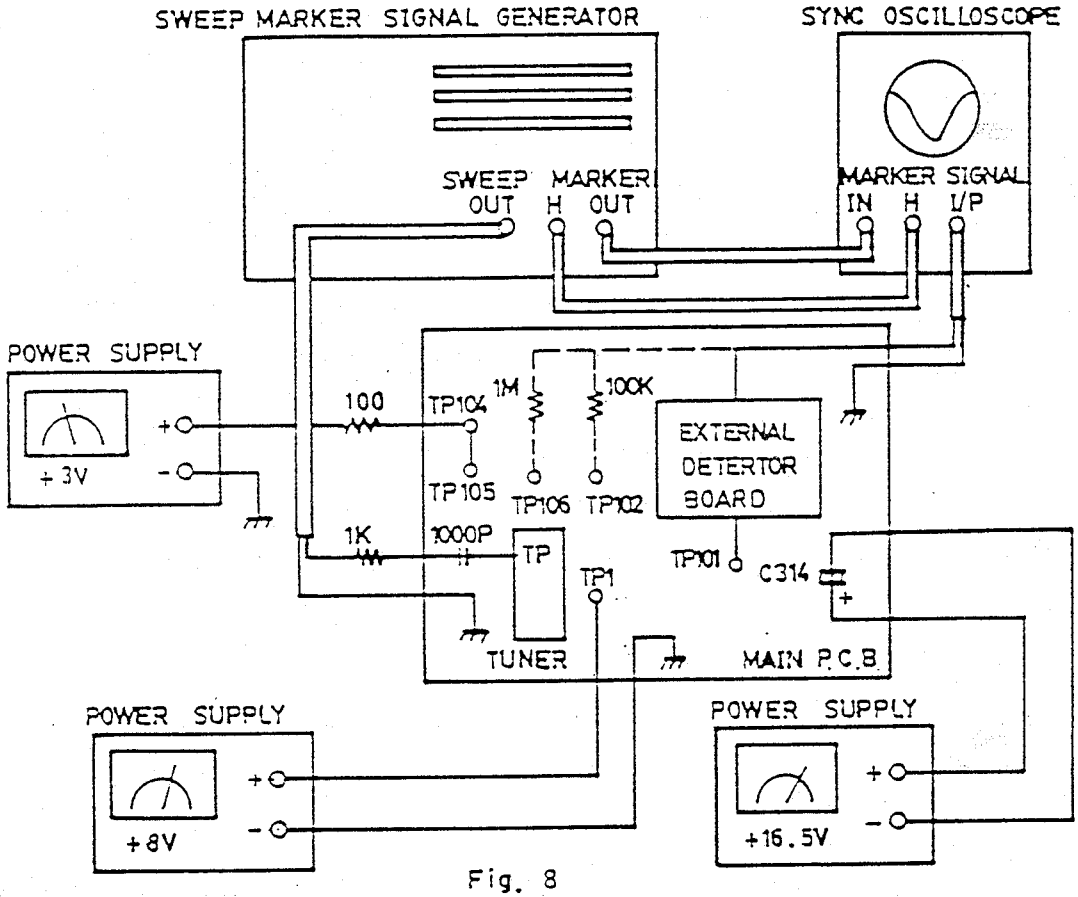


Fig. 8

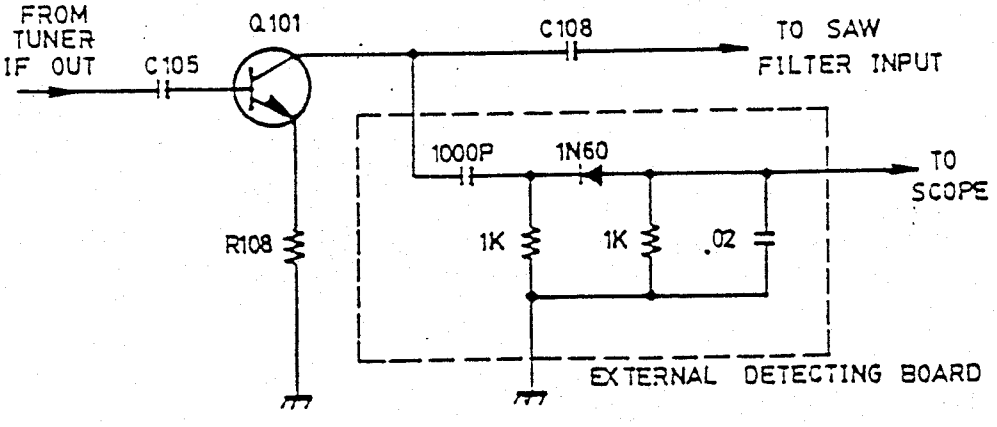


Fig. 9

GENERAL ADJUSTMENT INSTRUCTION

This receiver is transistorized and special care should be taken when servicing. Read the following matters that demand special attention before attempting adjustment.

1. Adjustment requires an exact procedure and should be undertaken only when necessary.
2. An isolation transformer should be used during any dynamic service to avoid possible shock hazard.
3. The test equipment specified or its equivalent is required to perform the alignment properly. Use of equipment which does not meet these requirements may result in improper alignment.
4. Correct matching of the equipment is essential. Failure to use proper matching will result in responses which can not represent the ture operation of the receiver.
5. The AC power line voltage should be kept 215 to 225 volts (50Hz) during alignment.
6. Do not attempt to connect or disconnect any wire while the receiver is in operation. Make sure the power cord is disconnected before replacing parts in the receiver.
7. Unless otherwise noted, do not perform any adjustment until the receiver has been turned on for at least 10 minutes.

I. Picture And Sound I.F. Adjustment

Test Equipment:

1. AM/FM signal generator (4.5MHz – 6.5MHz).
2. Sweep/Marker signal operator (30 MHz – 60 MHz).
3. Sync. oscilloscope.
4. Oscilloscope (volt sensitivity over 10mV and input impedance over 1 Mohm, below 10PF).
5. Probe (Low capacitance).
6. High impedance electronic voltmeter on VTM (Input impedance having 100K ohm/V at least).
7. DC power supply (Source such as a battery or a well regulated and isolated DC bias supply).

(A) Picture I.F. And AFC Adjustment

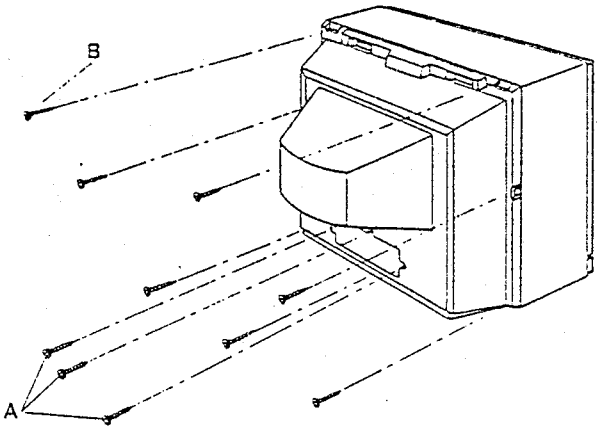
(a) P.I.F. Alignment:

1. Remove the external detecting circuit from Main Boand.
2. Reconnect the sync oscillossople input with look ohm resistor in series to TP102
3. Apply a +8V DC dummy AGC bias to TP103 (pin 5 of IC101) throught 470 ohm resistor.

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 2 OF THIS MANUAL.

CABINET BACK REMOVAL

1. Disconnect the antenna leads from the antenna terminals.
2. Remove 3 screws(A) securing the rear bracket to the back cover.
3. Remove 7 screws(B) securing the back cover to the front cabinet and detach the back cover.



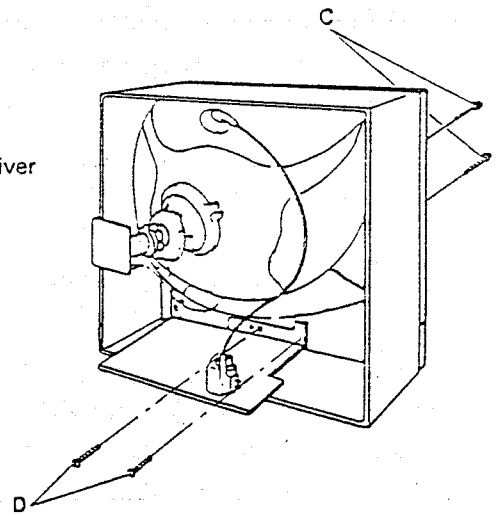
CHASSIS REMOVAL

Following the steps under Back Cover Removal, proceed as follows:-

1. Unplug the CRT grounding wire socket connected to the CRT Socket Board.
2. Detach the picture tube anode cap.

Notice: Certainly dischange the high potential of the picture tube anode to the receiver chassis before removing the anode cap.

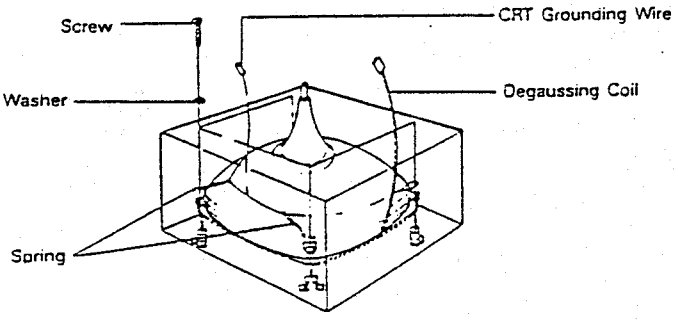
3. Detach the CRT Socket (CRT Socket Board).
4. Remove 2 screws(C) securing the cabinet to the front bracket.
5. Remove 2 screws(D) securing the control board to the control panel.
6. Take out the chassis from the Front Cabinet.



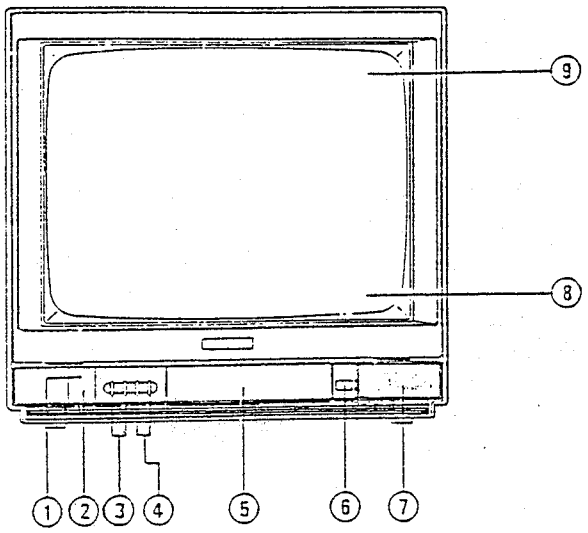
PICTURE TUBE REMOVAL

Following the steps under CHASSIS REMOVAL proceed as follows:

1. Place the cabinet with the front down on a rolled pad or some suitable cushion placed near the top edge of the front panel.
2. Remove 4 screws securing the picture tube to the cabinet, and detach the CRT with the degaussing coil, then grasp the face plate edge of the picture tube with both hands and take out the picture tube.
3. Detach the CRT grounding wire which is attached to the picture tube lugs with spring.

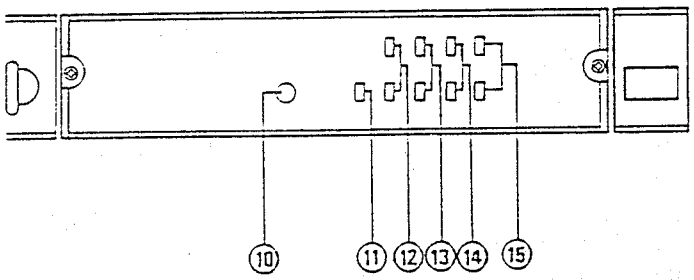


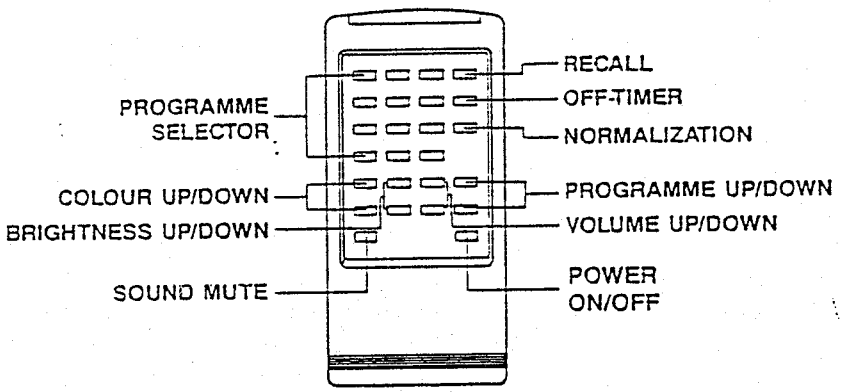
OPERATION CONTROLS



① INFRA-RED RECEIVING WINDOW
② STAND-BY INDICATOR
③ VOLUME CONTROL (UP/DOWN)
④ PROGRAMME BUTTONS (UP/DOWN)
⑤ PRESET DOOR
⑥ MAIN POWER SWITCH
⑦ SPEAKER
⑧ VOLUME LEVEL INDICATOR
⑨ PROGRAMME POSITION INDICATOR
⑩ CONTRAST CONTROL
⑪ AFT ON
⑫ AUTO SEARCH KEY (UP/DOWN)
⑬ FINE TUNING (UP/DOWN)
⑭ COLOUR CONTROL (UP/DOWN)
⑮ BRIGHTNESS CONTROL (UP/DOWN)

BEHIND THE PRESET DOOR





CAUTION

Before servicing the chassis, read the "Safety Precaution", "X-Ray Radiation Precaution" and "Product Safety Notice" on Page 2 of this manual."

X-RAY RADIATION PRECAUTION

1. Excessive high voltage can produce potentially hazardous X-Ray Radiation. To avoid such hazards, the high volatge must not be above the specificed limit. The normal value of the high voltage of this receiver is 27KV at zero beam current (minimum brightness) under 220V AC power source. The high voltage must not, under any circumstances, exceed 28KV.

2. Each time a receiver requires servicing, the high voltage should be checked follwoing the High Voltage Check procedure in this manual. It is recommended the reading of the high voltage be recorded as a part of the service record. It is important to use an accurate and reliable high voltage meter.

3. The primary source of X-Ray Radiation in this TV Receiver is the picture tube. For continued X-Ray Radiation protection, the replacement tube must be exactly the same type tube as specified in the parts list.

4. Some parts in this receiver have special safety – related characteristics for X-Ray Radiation protection. For continued safety, parts replacement should be undertaken only after referring to the Product Safety Notice below.

SAFETY PRECAUTION

Warning: Service should not be attempted by anyone unfamiliar with the necessary precautions on this receiver.

The following are the necessary precautions to be observed before servicing this chassis.

1. Since the power supply circuit of this receiver is directly connected to the AC power line, an isolation transformer should be used during any dynamic service to avoid possible shock hazard.

2. Always discharge the picture tube anode to the CRT conductive coating before handling the picture tube. The picture tube is highly evacuated and if broken, glass fragments will be violently expelled. Use shatter proof goggles and keep picture tube away from the unprotected body while handling.

3. When replacing a chassis in the cabinet, always be certain that all the protective devices are put back in place, such as: non-metallic control knobs, insulating covers, shields, isolation resistor-capacitor network etc.

4. When replacing parts or circuit boards, disconnect the power cord.

5. When replacing a high wattage resistor (Metal oxide film resistor) on circuit board, keep the resistor 10mm (1/2 in.) away from circuit board.

6. Connection wires must be kept away from components with high voltage or high temperature.

7. If any fuse in this TV receiver is blown, replace it with the FUSE specified in the chassis parts list.

8. The receiver is designed to operate with 220V (50Hz) AC mains.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the X-Ray Radiation protection afforded by them cannot necessarily be obtained by using replacement components rated for higher wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual and its supplements, electrical components having such features are marked with " ⚠ " on the schematic diagram and the part list.

Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire, X-Ray Radiation or other hazards.

SERVICE PRECAUTION: The area enclosed by this line (——) is directly connected with AC Main voltage.When servicing this area connect isolating transformer between TV receiver and AC line to eliminate hazard of electric shock.

IC 101
001-01240-00

IC202
001-02020-00

TA7618AP

IC201
001-02300-00

M51397

001-A118E-00

T-819SG / T-919SG

G01-A819A-00

LA7910

M50431-001SP

M50455

TP7688

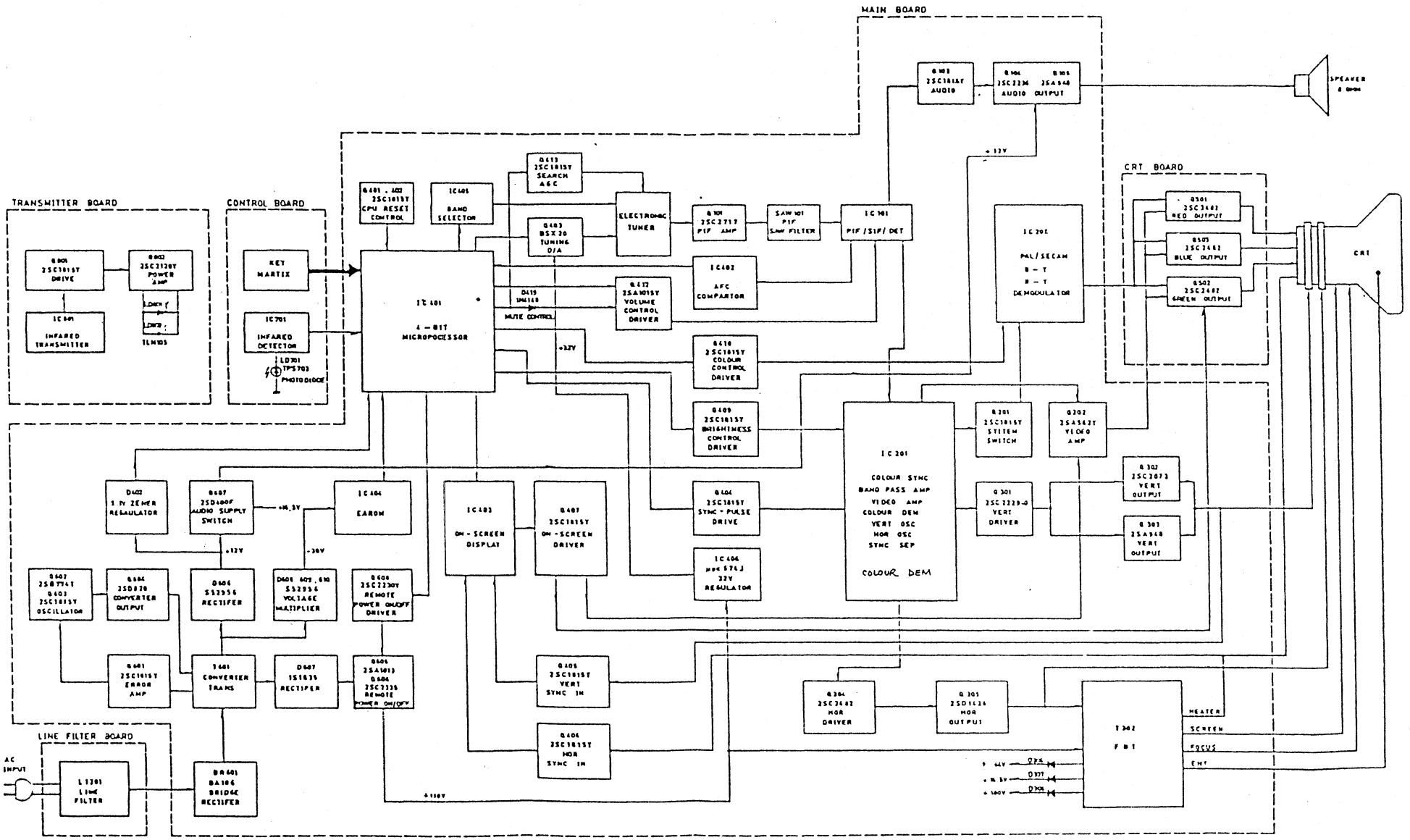
SERVICE PRECAUTION: The area enclosed by this line (- - - -) is directly connected with AC Main voltage. When servicing this area connect isolating transformer between TV receiver and AC line to eliminate hazard of electric shock.

G01-A819C-00 (G01-A919C-00)

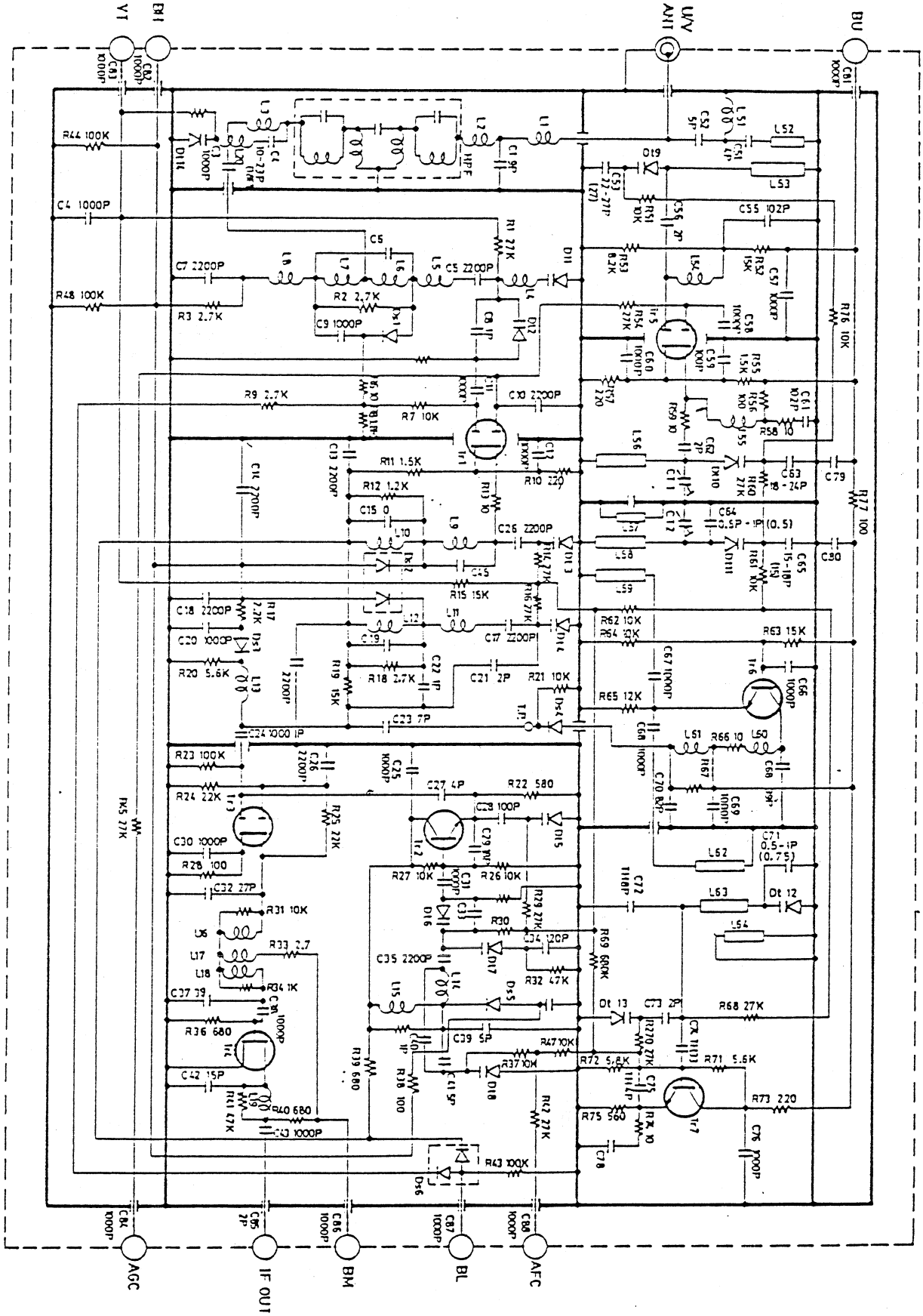
G01-B819E-00

G01-A819F(A919F)-02

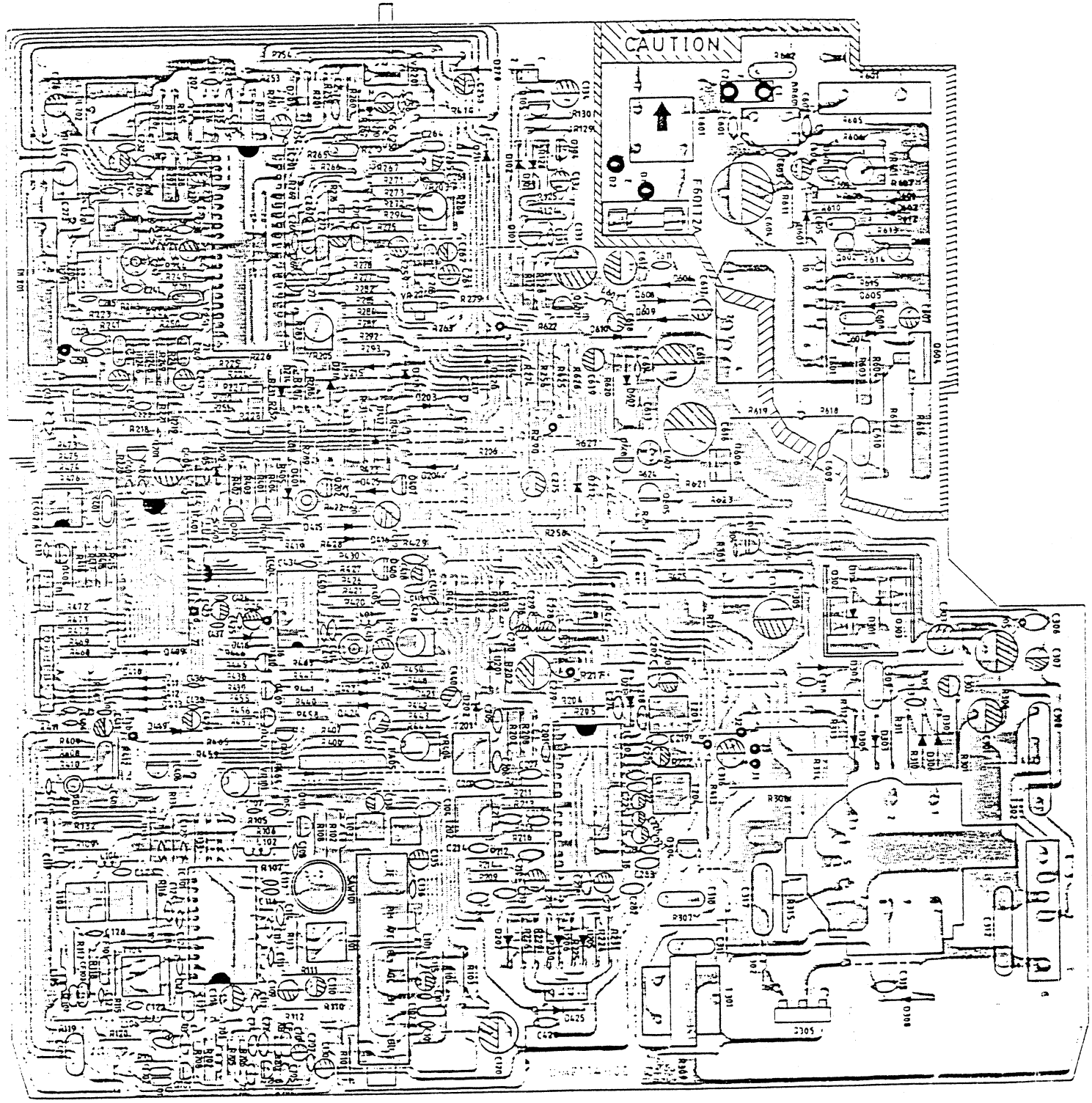
BLOCK DIAGRAM



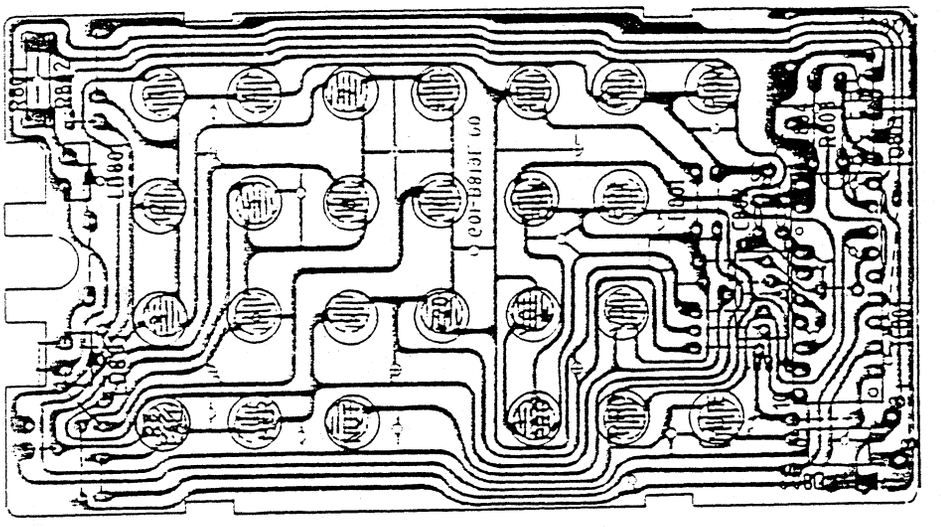
TUNER CIRCUIT



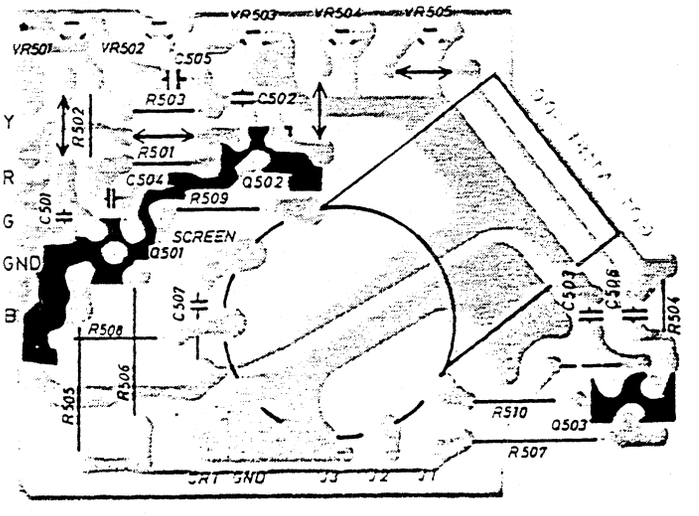
BOTTOM VIEW OF MAIN P.C. BOARD



COMPONENT VIEW OF HANDSET P.C. BOARD



COPPER SIDE OF CRT P.C. BOARD



WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 2 OF THIS MANUAL.

CAUTION: The areas marks ⚠ in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. Before replacing any of these components read carefully the PRODUCT SAFETY NOTICE on page 2. Do not degrade the safety of the receiver through improper servicing.

ABBREVIATIONS

Resistors: CF – Carbon Film Resistor
CC – Carbon Composition Resistor
MF – Metal Film Resistor
MO – Metal Oxide Resistor
FU – Fusible Resistor
NI – Non-Inflammable Resistor
SF – Semi-fixed Resistor

Capacitors: CE – Ceramic Capacitor
PO – Polyester Film Capacitor
PP – Polypropylene Film Capacitor
EL – Electrolytic Capacitor
TC – Temperature Compensating Capacitor
MP – Metal Polyestor Film Capacitor
AC – AC Capacitor

Wire: SJ – Single Jumper Wire AWG 22 (UL1007)
STJ – Strand Jumper Wire AWG 22 (UL1007)
ST – Strand Jumper Wire AWG 24 (UL1007)
STW – Strand Jumper Wire AWG 26 (UL1007)

Remark:
1) All resistors are ¼W, ±5% unless otherwise noted.
2) All capacitors are 50WV capacitor unless otherwise noted

ELECTRICAL PARTS LIST

SCHEMATIC NO.	PART NO	DESCRIPTION
MAIN P.C.B. ASSEMBLY		
TRANSISTOR		
Q101	A01-C717A-00	2SC2717
Q401, 402, 404, 405, 406, 407, 409, 410, 413, 601, 201	A01-C815E-00	2SC1815-Y
Q603		
Q301	A01-C229D-00	2SC2229-0
Q202	A01-A562E-00	2SA562-TMY
Q302	A01-C073D-00	2SC2073
Q303	A01-A940D-00	2SA940
Q304	A01-C482D-00	2SC2482
Q305	A01-D426A-00	2SD1426
Q602	A01-B774D-00	2SB774-T
Q604	**A01-D431A-00	2SD1431
Q608	A01-C230E-00	2SC2230-AY
Q607	A03-D400E-00	2SD400F
Q605	A01-A013E-00	2SA1013Y
Q606	A02-C335C-00	2SC2335 ALTERNATE BUV46(A01-V046C-00)
Q104	A01-C236D-00	2SC2236-0
Q105	A01-A966D-00	2SA966-0
Q412	A01-A015E-00	2SA1015Y
Q403	A06-S002D-00	BSX20
Q103	A01-C315G-00	2SC1815BL
DIODE		
D101, 102, 211, 212, 408, 409, 410, 411, 412, 413, D414, 415, 416, 417, 419, 420, 423, 424, 425	B01-01148-00	IN4148
D209, 210, 214, 215, 216, 218, 301, 304, 201, 203, 204 D205, 206, 207, 213	B01-01555-00	1S1555
D307, 308, 603, 604, 605, 606, 608, 609, 610	B01-02529-00	S5295G ALTERNATE BYT52K (B08-02052-01)
D306	B01-02529-01	S5295J ALTERNATE BYT52K (B08-02052-01)
D607	B01-02835-00	1S1835 ALTERNATE BYT52K (B08-02052-01)
D302, 303	B01-02002-00	TVR-2D
BR601	B01-01010-00	DBA10G ALTERNATE DBA10G (B01-01010-00)
D305	B01-01004-00	1N4004S
D601	B01-04082-00	8.2V ZENER (GZA 8.2Y)
D602	B01-04090-00	9.1Y ZENER (GZA 9.1Y)
D401	**B01-04039-00	3.9V ZENER (UZ 3.9B)
D402	**B01-04051-00	5.1V ZENER (GZA 5.1Y)
D418	**B01-04300-00	30V ZENER (GZA 30Y)
D202	B01-04170-00	12V ZENER (GZA 12Y)
D421	B01-04056-00	5.6V ZENER (GZA 5.6Y)

SCHEMATIC NO	PART NO.	DESCRIPTION
SEMI-FIXED RESISTOR		
VR202, 601	C01-B103B-C0	1KB MATRIX, B+
VR101	C01-B5038-C0	5KB AGC
VR203, 205, 404	**C01-B1048-C0	10KB SUB-BRIGHTNESS/VERT. H./H. HOLD
VR204	C02-A205B-C0	200KB V-HOLD
VR201	**C07-C1048-81	10MM ROTARY 10KB P.C.B. TYPE VR SHAFT LENGTH 25MM BLACK
CARBON FILM RESISTOR +/-5% 1/4W		
R129, 130	D01-A010 C-D0	1 OHM
R295	D01-A056C-D0	5.6 OHM
R128	D01-A100C-D0	10 OHM
R108	D01-A270C-D0	27 OHM
R309	D01-A470C-D0	47 OHM
R288	D01-A680C-D0	68 OHM
R270, 294	D01-A820C-D0	82 OHM
R102, 119	D01-A101C-D0	100 OHM
R229, 230, 231	D01-A151C-D0	150 OHM
R109, 206, 243, 433	D01-A221C-D0	220 OHM
R242	D01-A241C-D0	240 OHM
R117, 285, 611, 214	D01-A331C-D0	330 OHM
R209	D01-A391C-D0	390 OHM
R223, 286, 287, 430	D01-A471C-D0	470 OHM
R125, 126, 236, 245, 259	D01-A561C-D0	560 OHM
R246, 247, 434, 625, 227, 228, 211, 216, 233, 291	D01-A681C-D0	680 OHM
R107, 235, 244, 266	D01-A821C-D0	820 OHM
R106, 110, 115, 118, 131, 282, 293, 420, 421, 426, 427, R462, 467, 468, 469, 470, 471, 472, 627 251 252	D01-A102C-D0	1 KOHM
R237, 241, 255, 424, 458, 208, 213	D01-D152C-D0	1.5 KOHM
R205	D01-A122C-D0	1.2 KOHM
R275, 608, 207, 212	D01-A182C-D0	1.8 KOHM
R111, 113, 120, 123, 127, 261, 405, 463	D01-A222C-D0	2.2 KOHM
R276	D01-A242C-D0	2.4 KOHM
R202, 284, 621	D01-A272C-D0	2.7 KOHM
R269, 416, 422, 446, 607, 224, 225, 226, 210, 215	D01-A332C-D0	3.3 KOHM
R267, 268	D01-A362C-D0	3.6 KOHM
R116, 429, 474, 475, 232	D01-A392C-D0	3.9 KOHM

ELECTRICAL PARTS LIST

SCHEMATIC NO.	PART NO	DESCRIPTION
R406, 407, 613	D01-A472C-D0	4.7 KOHM
R105, 297, 414	D01-A562C-D0	5.6 KOHM
R254, 425, 428, 440, 473, 476, 606, 612, 264	D01-A682C-D0	6.8 KOHM
R114, 265, 609, 709	D01-A822C-D0	8.2 KOHM
R101, 401, 402, 404, 409, 438, 444, 610, 217, 219	D01-A103C-D0	10 KOHM
R443	D01-A123C-D0	12 KOHM
R280	D01-A153C-D0	15 KOHM
R283	D01-A183C-D0	18 KOHM
R124, 447	D01-A203C-D0	20 KOHM
R281, 415, 439, 459, 220, 448	D01-A223C-D0	22 KOHM
R305	D01-A243C-D0	24 KOHM
R274	D01-A273C-D0	27 KOHM
R248, 249, 303, 403, 408, 410, 411, 412, 417, 418,	D01-A333C-D0	33 KOHM
R431, 432, 455, 221, 222 R271, 442	D01-A363C-D0	36 KOHM
R278, 203	D01-A393C-D0	39 KOHM
R132, 133	D01-A473C-D0	47 KOHM
R103, 262, 304, 445, 204	D01-A563C-D0	56 KOHM
R441	D01-A683C-D0	68 KOHM
R250, 450	D01-A823C-D0	82 KOHM
R238, 263, 419, 456, 457, 465, 218	D01-A104C-D0	100 KOHM
R104, 201, 253	D01-A124C-D0	120 KOHM
R464	D01-A224C-D0	220 KOHM
R227, 279	D01-A244C-D0	240 KOHM
R239	D01-A334C-D0	330 KOHM
R134	D01-A394C-D0	390 KOHM
R260	D01-A564C-D0	560 KOHM
R112, 298	D01-A824C-D0	820 KOHM
CARBON FILM RESISTOR +/-5% 1/2W		
R289	D01-A361C-F0	360 OHM
R307	D01-A272C-F0	2.7 KOHM
R315	D01-A103C-F0	10 KOHM
R623, 624	D01-A104C-F0	100 KOHM
R314	D01-A124C-F0	120 KOHM
R622	D01-A152C-F0	1.5 KOHM
R292	D01-A222C-F0	2.2 KOHM
R290	D01-A822C-F0	8.2 KOHM
METAL FILM RESISTOR		
R272	D00-C1538-D0	15 KOHM +/-2% 1/4W
R273	D00-C1548-D0	150 KOHM +/-2% 1/4W

SCHEMATIC NO	PART NO.	DESCRIPTION
METAL OXIDE RESISTOR		
R258	D04-D561C-F0	560 OHM +/-5% 1/2W
R301, 302	D04-D821C-F0	820 OHM +/-5% 1/2W
R306	D04-D027C-G0	2.7 OHM +/-5% 1/2W
R311	D04-D100C-G0	10 OHM +/-5% 1/2W
R121	D04-D390C-G0	39 OHM +/-5% 1/2W
R626	D04-D221C-G0	220 OHM +/-5% 1/2W
R616	D04-D003C-H0	0.33 OHM +/-5% 2W
R614, 620	D04-D120C-H0	12 OHM +/-5% 2W
R615, 256	D04-D270C-H0	27 OHM +/-5% 2W
R257	D04-D822C-H0	8.2 KOHM +/-5% 2W
R413	D04-D153C-H0	15 KOHM +/-5% 2W
R308	D04-D222C-I0	2.2 KOHM +/-5% 3W
FUSIBLE RESISTOR		
R310	D03-E100C-F0	10 OHM +/-5% 1/2W
R312	D03-E043C-G0	4.3 OHM +/-5% 1W
NON-INFLAMMABLE RESISTOR		
R601	D03-G040D-J0	4 OHM +/-10% 5W KW-SQZ
R605	D03-G022D-H0	2.2 OHM +/-10% 2W KW-KNP
R313	D03-G039D-H0	3.9 OHM +/-10% 2W KW-KNP
R617	D03-G390D-K0	39 OHM +/-10% 6W KW-KNP
R602	D06-H300Z-00	P.T.C. THERMISTOR
CARBON COMPOSITION RESISTOR		
R618, 619	D05-B565D-F0	5.6 MOHM +/-10% 1/2W
R603, 604	D05-B184D-F0	180 KOHM +/-10% 1/2W
C242, 413	E04-8200A-00	TRIMMER CAPACITOR 20PF
CERAMIC CAPACITOR		
C124, 125	F01-C020F-A0	2PF 50V +/-0.25PF
C241, 235	F01-C100F-C0	10PF 50V +/-5%
C126, 224, 231	F01-C150F-C0	15PF 50V +/-5 %
C243, 439	F01-C220F-C0	22PF 50V +/-5 %
C257	F01-C270F-C0	27PF 50V +/-5 %
C401, 402	F01-C300F-C0	30PF 50V +/-5 %
C202	F01-C330F-C0	33PF 50V +/-5 %
C127, 128, 406	F01-C470F-C0	47PF 50V +/-5 %
C212, 285, 407	F01-C560F-C0	56PF 50V +/-5 %
C245, 207	F01-C680F-C0	68PF 50V +/-5 %
C239, 206, 211	F01-C390F-C0	39PF 50V +/-5 %
C420	F01-C820F-C0	82PF 50V +/-5 %
C414, 434	F01-C101F-C0	100PF 50V +/-5 %
C437, 438, 222	F01-C151F-C0	150PF 50V +/-5 %
C233	F01-C181F-C0	180PF 50V +/-5 %
C282, 283, 284	F01-C201F-C0	200PF 50V +/-5 %
C205, 210, 229, 230, 274, 435	F01-C221F-C0	220PF 50V +/-5 %
C433, 209, 214	F01-C331F-C0	330PF 50V +/-5 %
C418	F01-C391F-C0	390PF 50V +/-5 %
C258	F01-C561F-C0	560PF 50V +/-5 %

ELECTRICAL PARTS LIST

SCHEMATIC NO.	PART NO	DESCRIPTION
C105, 107, 111, 112, 113, 116, 117, 118, 122, 129, 223, C237, 238, 240, 251, 256, 268, 416, 424, 425, 201 C204, 217, 218, 219, 221	F01-C103F-G0	0.01UF 50V +80-20%
C136, 232	F01-C104F-G0	0.1UF 50V +80-20%
C101, 103, 104, 119, 405, 410, 412	F01-C203F-G0	0.02UF 50V +80-20%
C278	F01-C403F-G0	0.04UF 50V +80-20%
C108, 114, 131, 269, 403, 436, 208, 213	F01-C102F-D0	1000PF 50V +/-10%
C304, 313, 315, 318, 611	F05-C221N-D0	220PF 500V +/-10%
C306, 601, 602	F05-C472N-D0	0.0047UF 500V +/-10%
C614	F05-C2220-D0	0.0022UF 1KV +/-10%
C603, 613	F05-C4720-D0	0.0047UF 1KV +/-10%
C609	F05-C222W-E0	AC CAPACITOR 0.0022UF AC400V +/-20%
POLYESTER FILM CAPACITOR		
C248, 249, 250	F11-M223H-D0	0.022UF 100V +/-10%
C267, 605	F11-M333H-D0	0.033UF 100V +/-10%
C102, 608	F11-M104H-D0	0.1UF 100V +/-10%
C272, 409	F11-M224H-D0	0.22UF 100V +/-10%
C270	F11-M153H-D0	0.015UF 100V +/-10%
C408	F11-M474H-D0	0.47UF 100V +/-10%
C121	F11-M332H-D0	0.0033UF 100V +/-10%
POLYPROPYLENE FILM CAPACITOR (B TYPE)		
C260	F08-D152F-C0	0.0015UF 50V +/-5%
C261	F08-D562F-C0	0.0056UF 50V +/-5%
C266	F08-D302F-C0	0.003UF 50V +/-5%
C264	F08-D103F-C0	0.01UF 50V +/-5%
POLYPORPYLENE FILM CAPACITOR		
C310	F08-P222N-D0	0.0022UF 630V +/-10%
C309	F08-P153K-D0	0.015UF 200V +/-10%
C311	F08-P473K-D0	0.047UF 200V +/-10%
C317	F08-P563K-D0	0.056UF 200V +/-10%
C308	F08-P474K-D0	0.47UF 200V +/-10%
C312	F08-P662P-C0	0.0066UF 1.6 KV +/-5%
C610	F08-P2220-D0	0.0022UF 1200V +/-10%
T-C CERAMIC CAPACITOR		
C123	F01-L680F-C0	68PF 50V +/-5%

SCHEMATIC NO	PART NO.	DESCRIPTION
ELECTROLYTIC CAPACITOR (SINGLE ENDED TYPE)		
C404	F01-E337B-E0	330UF 10V +/-20%
C110, 135, 246, 247, 259, 428, 440, 215, 216, 228, 277,	F01-E106C-E0	10UF 16V +/-20%
C132	F01-E476C-E0	47UF 16V +/-20%
C134, 279	F01-E227C-E0	220UF 16V +/-20%
C276	F01-E477C-E0	470UF 16V +/-20%
C120, 133	F01-E108C-E0	1000UF 16V +/-20%
C253	F01-E475D-E0	4.7UF 25V +/-20%
C607	F01-E476D-E0	47UF 25V +/-20%
C612	F01-E227D-E0	220UF 25V +/-20%
C314	F01-E228D-E0	1000UF 25V +/-20%
C273	F01-E225F-D0	2.2UF 50V +/-10%
C106	F01-E224F-E0	0.22UF 50V +/-20%
C244, 265, 271, 275, 220	F01-E474F-E0	0.47UF 50V +/-20%
C109, 130, 138, 234, 236, 254, 255, 262, 263, 411,C416, 426, 419, 427, 431, 203, 225, 226, 227	F01-E105F-E0	1UF 50V +/-20%
C115, 307, 429	F01-E225F-E0	2.2UF 50V +/-20%
C280	**F01-N225F-E0	2.2UF 50V N.P. +/-20%
C302, 423, 606, 617, 619	F01-E106F-E0	10UF 50V +/-20%
C618	F01-E226F-E0	22UF 50V +/-20%
C301	F01-E107F-E0	100UF 50V +/-20%
C305	F01-E227F-E0	220UF 50V +/-20%
C316	F01-E106H-F0	10UF 100V +/-20%
C303	F01-E475I-F0	4.7UF 160V +50-10%
C615	F01-E476I-F0	47UF 160V +50-10%
C616	F01-E107I-F0	100UF 160V +50-10%
C604	F01-E107M-F0	100UF 400V +50-10%
PC3001	**G01-A019A-01	MAIN P.C. BOARD 280MM X 279MM X 1.6MM
L102	H05-0102A-00	PEAKING COIL 1UH
L104	H05-0103A-00	PEAKING COIL 5.6UH
L201	H05-0104A-00	PEAKING COIL 8.2UH
L105, 106, 401	H05-0105A-00	PEAKING COIL 15UH
L202	**H05-0106A-00	PEAKING COIL 33UH
L101	H05-0111A-00	PEAKING COIL 100UH
L302	**H13-0203A-00	CHOKE COIL 1UH
L602	H02-0101A-00	CHOKE COIL 90UH
L601	H02-1031A-00	CHOKE COIL 5UH
T101	H01-1301A-00	PIF MATCHING COIL
T102, 103	H01-1302A-00	PIF DET COIL
T104	H01-1303A-00	SIF DET COIL
T205	H01-1401A-00	DELAY LINE MATCHING COIL
T206	H01-1402A-00	BURST CLEANING COIL
DL202	H01-0701A-00	Y-DELAY LINE
T203	H01-1403A-00	BELL FILTER COIL
T204	H01-1404A-00	IDENT. COIL
T201, 202	H01-1405A-00	DISCRI. BURST COIL
T105, 106	H01-1801A-00	7MM TRAP COIL

ELECTRICAL PARTS LIST

SCHEMATIC NO.	PART NO	DESCRIPTION
T301	I01-0401A-00	HORIZONTAL DRIVE TRANSFORMER
T302	I12-0502A-00	FLYBACK TRANFORMER CF68A
T601	I07-0601A-00	SWITCHING TRANFORMER
TAIKO TL-25 V-TYPE CONNECTOR		
SOCKET C	J05-0102A-00	2 PINS WAFER TL-25P-02-V1
SOCKET B	**J05-0104A-00	4 PINS WAFER TL-25P-04-V1
SOCKET A	**J05-0109A-00	9 PINS WAFER TL-25P-09-V1
SOCKET Y	J03-0401A-00	SMK M-1 CONNECTOR WAFER 1 PIN
SOCKET G	J03-0406A-00	SMK M-1 CONNECTOR WAFER 6 PINS
FOR AC IN, DEGAUSSING COIL	J05-0101A-00	TAIKO TS-80 CONNECTOR
X201	M07-A4434-00	CRYSTAL 4.43361875MHZ
X401	**M02-A4004-00	CRYSTAL 4.00 MHZ
	N01-02B01-01	TUNER B/G SYSTEM (UVE33-W14)
INTEGRATED CIRCUIT		
IC101	001-01240-00	TA7680AP ALTERNATE KA2914A (011-10240-00)
IC201	001-02420-00	TA7698AP
IC406	007-06020-00	L5630 ALTERNATE KA33V (011-06020-00)
IC401	**004-01420-00	M50431-101SP
IC404	**004-01140-00	M58655P
IC403	**004-01160-00	M50453-012
IC402	**004-01080-00	M51923P
IC202	004-01300-00	M51397AP
IC405	**007-02090-00	LA7910
CF101	X02-01001-00	CERAMIC FILTER SFE 5.5 MHZ
CF102	X02-02001-00	CERAMIC FILTER TPS 5.5MHZ
SAW101	X01-03002-00	TV PIF SAW FILTER F10378
DL201	Y02-01401-01	ULTRASONIC DELAY LINE ALTERNATE (YP3-01401-01) GLASS DELAY LINE OR EFD-END-EN645A11G (6704-030200-00)

SCHEMATIC NO	PART NO.	DESCRIPTION
SINGLE JUMPER WIRE AWG22		
L2=5MM TINNED L3=7MM NON-TINNED	S02-81911-EA	190MM BROWN B
L2=5MM TINNED L3=7MM NON-TINNED	S02-81512-EA	150MM RED D
L2=5MM TINNED L3=7MM NON-TINNED	S02-81413-EA	140MM ORANGE C
L2=5MM TINNED L3=7MM NON-TINNED	S02-82004-EA	200MM YELLOW E
L2=5MM TINNED L3=7MM NON-TINNED	S02-82500-EA	250MM BLACK F
CRT P.C.B. ASSEMBLY		
TRANSISTOR		
Q501, 502, 503	A01-C482D-00	2SC2482
SEMI-FIXED RESISTOR		
VR501, 502	C01-A202B-C0	200B (RVF8W01-201) G.B. - DRIVE
VR503, 504, 505	C01-A503B-C0	5KB (RVF8W01-502) R.G.B. - CUT OFF
CARBON FILM RESISTOR 1/4W +/-5%		
R501, 502, 503, 504	D01-A151C-D0	150 OHM
CARBON COMPOSITION RESISTOR 1/2W +/-10%		
R508, 509, 510	D05-B472C-F0	4.7 KOHM
METAL OXIDE RESISTOR		
R505, 506, 507	D04-D153C-H0	15 KOHM 2W +/-5%
CERAMIC CAPACITOR		
C504, 505, 506	F01-C102F-D0	.001UF 50V +/-10%
C507	F05-C4720-D0	.0047 UF 1KV +/-10%
PC3002	G01-A118E-00	CRT PCB
	V01-05001-60	PICTURE TUBE SOCKET: ALTERNATE PICTURE TUBE SOCKET (22.5MM) MINI DECK (V0P-05001-10)
CRT GROUNDING	J05-01010-00	TAIKO CONNECTOR TS-80